

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: LUMARK

Report Number: P196090

Luminaire Tested: **NAV-AF-04-D-UNV-SL2-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196090
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24257)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-04-D-UNV-SL2-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL
LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 19767.5 lumens
Efficiency: N/A
Efficacy: 115.6 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B3 - U0 - G3

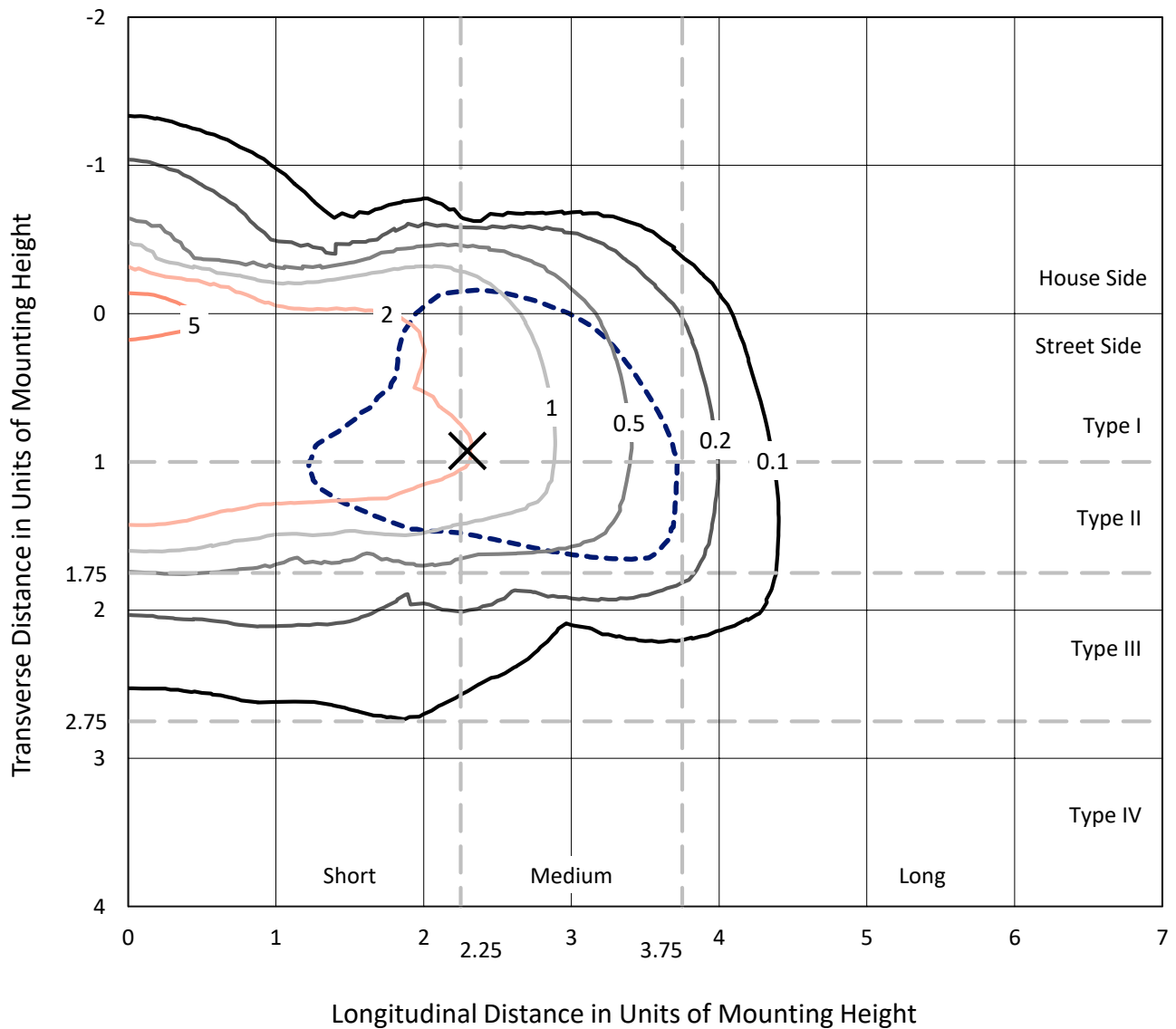
Input Watts (W): 171
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

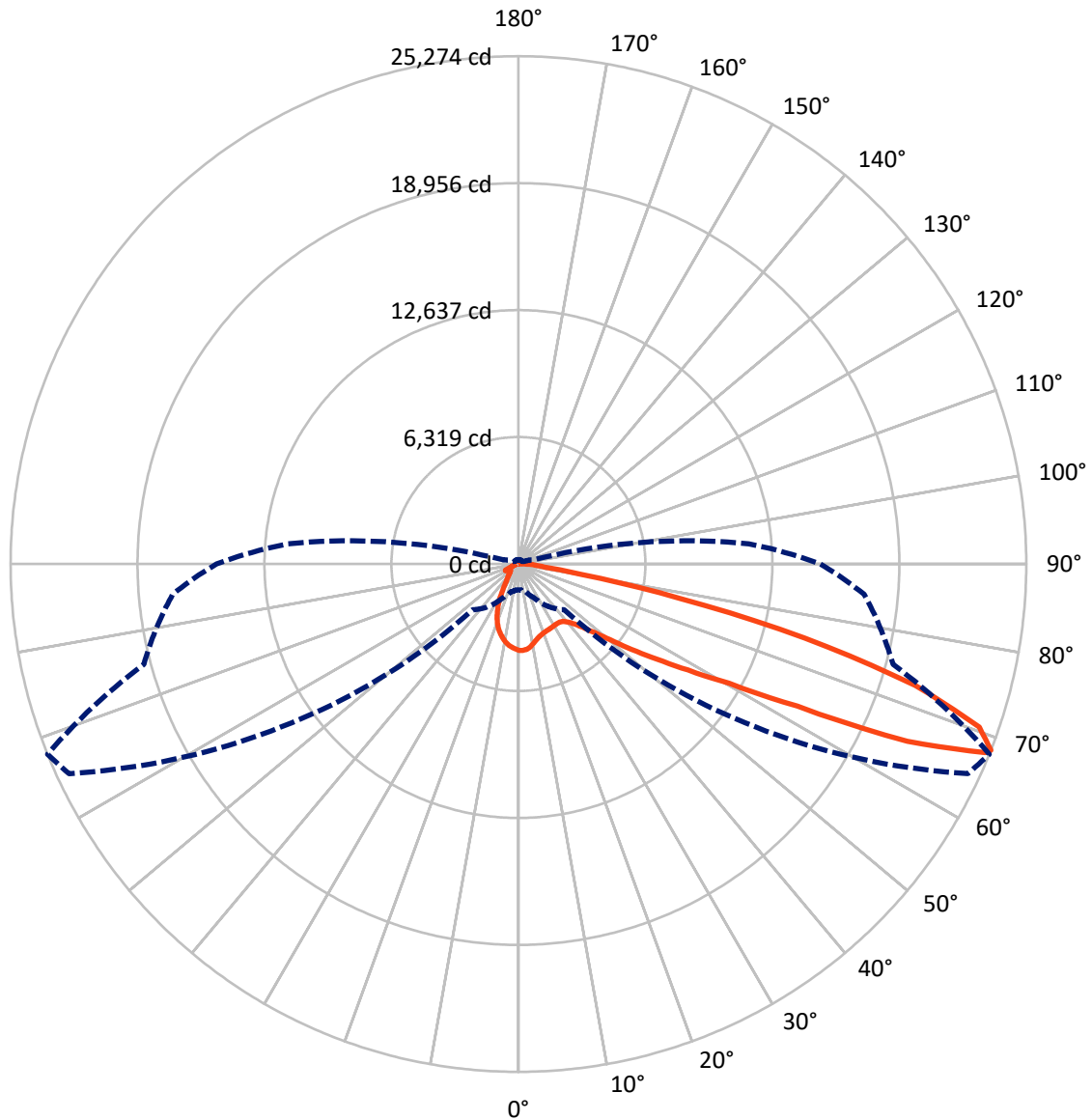
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.9 fc
 Type II - Medium - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 68-Deg Lateral - - - Horizontal Cone Through 68-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3234.0	0.0	3234.0
	% Fixture	16.4	0.0	16.4
Street Side	Lumens	16533.5	0.0	16533.5
	% Fixture	83.6	0.0	83.6
Total	Lumens	19767.5	0.0	19767.5
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	368.5	1.9
10°-20°	854.8	4.3
20°-30°	1156.1	5.8
30°-40°	1630.0	8.2
40°-50°	2680.3	13.6
50°-60°	4154.8	21.0
60°-70°	5387.0	27.3
70°-80°	3091.3	15.6
80°-90°	444.8	2.2
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	19767.5	100.0
0°-180°	19767.5	100.0



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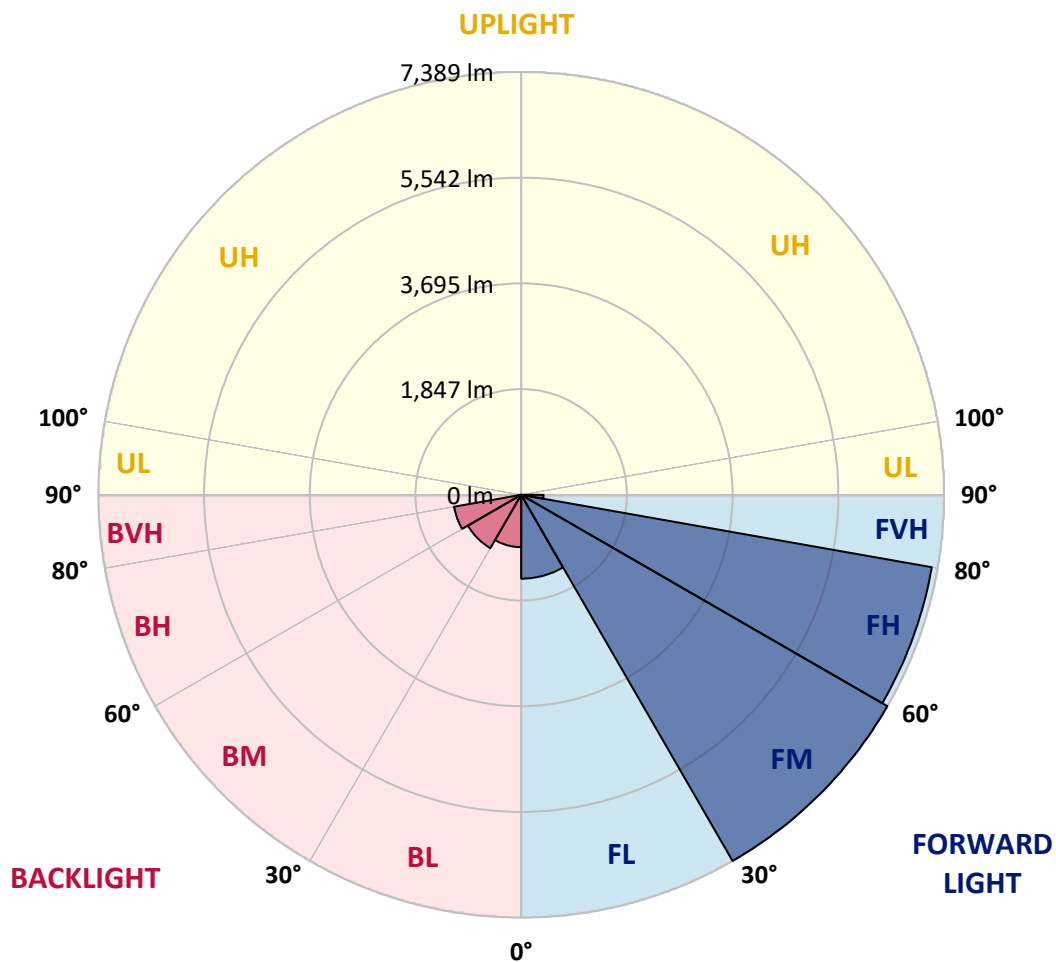
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1465.1	7.4			
FM	(30°-60°)	7389.4	37.4			
FH	(60°-80°)	7287.2	36.9			G3/7500
FVH	(80°-90°)	391.8	2.0			G3/500
BL	(0°-30°)	914.3	4.6	B2/1000		
BM	(30°-60°)	1075.7	5.4	B2/2500		
BH	(60°-80°)	1191.1	6.0	B3/2500		G3/2500
BVH	(80°-90°)	53.0	0.3			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G3

Type II Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	68°	75°	85°
0°	4301.2	4301.2	4301.2	4301.2	4301.2	4301.2	4301.2	4301.2	4301.2	4301.2	4301.2
2.5°	4186.3	4219.9	4219.9	4244.4	4266.3	4284.4	4300.0	4300.0	4300.0	4289.6	4280.5
5°	3745.9	3791.2	3797.6	3859.6	3940.9	4040.3	4151.4	4249.5	4269.0	4305.1	4319.3
7.5°	3440.0	3454.2	3478.6	3521.3	3604.0	3726.6	3900.9	4120.4	4173.4	4287.0	4346.4
10°	3223.0	3234.7	3255.3	3297.9	3372.8	3483.9	3655.6	3940.9	4028.8	4230.2	4347.7
12.5°	3064.1	3073.3	3092.6	3131.4	3207.6	3307.0	3482.5	3779.6	3888.0	4173.4	4365.7
15°	2940.3	2955.7	2971.3	3008.7	3086.1	3181.7	3359.9	3662.1	3779.6	4128.2	4399.4
17.5°	2891.2	2898.9	2901.5	2920.8	2990.6	3087.5	3265.7	3579.4	3700.8	4092.0	4425.2
20°	2922.2	2923.5	2897.6	2884.7	2924.7	3013.8	3186.9	3517.4	3641.4	4059.8	4435.5
22.5°	3057.7	3057.7	2990.6	2933.8	2906.6	2962.2	3133.9	3474.9	3609.1	4035.2	4435.5
25°	3316.0	3304.3	3199.8	3087.5	2967.4	2944.1	3100.4	3447.7	3584.6	4022.3	4418.7
27.5°	3655.6	3645.3	3512.3	3345.7	3128.8	2982.8	3088.7	3425.8	3560.1	4002.9	4382.6
30°	4068.8	4059.8	3908.7	3690.5	3370.2	3105.5	3115.8	3410.2	3540.6	3970.7	4321.9
32.5°	4480.7	4475.5	4355.4	4132.1	3703.4	3313.4	3186.9	3407.7	3530.3	3931.9	4248.3
35°	4895.2	4895.2	4821.6	4633.0	4151.4	3625.8	3335.3	3455.4	3549.7	3911.3	4185.0
37.5°	5507.3	5482.7	5345.8	5150.9	4715.7	4031.3	3575.5	3556.2	3624.6	3946.1	4164.3
40°	6455.1	6384.0	6041.9	5713.9	5331.6	4550.5	3926.8	3751.2	3792.5	4064.9	4213.4
42.5°	7446.8	7334.5	6881.2	6356.9	5968.3	5191.0	4387.7	4067.6	4066.2	4294.8	4369.6
45°	8297.8	8239.7	7749.0	7083.9	6695.2	5911.4	4970.1	4537.5	4491.1	4651.2	4670.5
47.5°	8792.3	8753.5	8457.9	7853.5	7557.9	6762.4	5708.7	5189.6	5101.9	5197.4	5167.6
50°	8655.4	8692.8	8607.6	8299.0	8485.0	7958.1	6650.1	6083.2	5916.6	6012.2	5939.9
52.5°	7934.8	8035.6	8111.8	8171.2	9018.2	9558.0	7832.8	7198.8	7060.7	7043.9	6974.2
55°	6637.1	6797.3	7037.4	7473.9	8874.9	10842.9	9898.9	8548.2	8346.8	8240.9	8268.0
57.5°	4516.8	4759.6	5277.4	6107.7	8129.9	11390.4	12954.0	10291.5	9950.5	9573.5	9661.3
60°	2488.3	2691.0	3307.0	4143.7	6429.2	11308.9	15661.9	13124.5	12051.5	11052.0	11232.8
62.5°	1610.2	1654.1	2112.5	2830.5	3946.1	9984.1	17166.2	17859.6	15585.7	13001.8	13256.2
65°	1293.8	1324.8	1549.6	2283.0	2749.1	6422.8	17233.3	22771.6	21272.5	15651.6	15659.2
67.5°	1264.2	1278.4	1408.8	1920.1	2578.7	3496.8	14896.1	24708.6	25055.9	18779.0	17266.9
68°	1282.3	1299.0	1430.7	1860.7	2577.4	3223.0	13767.6	24678.8	25274.0	19302.0	17266.9
70°	1131.2	1151.8	1459.1	1925.3	2467.7	2771.1	9427.6	23368.2	24326.3	20504.1	16383.7
72.5°	591.4	574.6	721.8	1519.8	2777.5	2887.3	4980.4	19522.8	20641.0	18989.4	14155.0
75°	460.9	419.6	404.2	600.5	2443.1	2994.5	2892.5	13876.0	14720.5	13688.8	9461.2
77.5°	433.8	383.5	353.8	355.1	1075.6	3115.8	2339.8	8166.0	8166.0	6530.0	3019.0
80°	348.6	302.2	282.7	322.8	519.0	2871.8	2441.8	3721.5	3173.9	1687.7	831.6
82.5°	229.9	205.3	206.6	262.1	393.8	1917.5	2827.8	1837.5	1380.4	747.7	489.4
85°	145.9	125.2	139.4	183.3	294.4	854.8	2799.5	1277.1	914.2	419.6	244.1
87.5°	73.7	56.8	69.8	95.5	179.5	245.3	2304.9	1140.2	677.9	174.3	133.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	4301.2	4301.2	4301.2	4301.2	4301.2	4301.2	4301.2	4301.2	4301.2	4301.2	4301.2
2.5°	4280.5	4252.2	4238.0	4214.8	4186.3	4157.9	4138.6	4129.4	4124.3	4126.9	4125.7
5°	4311.5	4274.1	4213.4	4126.9	4037.8	3943.6	3871.3	3815.7	3780.8	3770.5	3767.9
7.5°	4334.8	4280.5	4167.0	4009.4	3857.0	3691.7	3551.0	3438.6	3362.4	3327.7	3326.3
10°	4331.0	4261.2	4081.7	3849.3	3625.8	3383.1	3162.4	2973.8	2836.9	2771.1	2768.5
12.5°	4334.8	4239.2	3977.1	3662.1	3341.8	2994.5	2666.5	2373.3	2169.4	2072.5	2068.6
15°	4350.3	4216.0	3869.9	3452.9	3009.9	2519.3	2050.5	1682.5	1496.6	1433.4	1433.4
17.5°	4349.0	4177.2	3745.9	3210.1	2616.1	1958.8	1399.7	1172.5	1154.4	1212.5	1221.5
20°	4323.2	4115.3	3585.9	2922.2	2153.8	1355.8	949.1	916.8	1061.4	1221.5	1239.6
22.5°	4283.2	4035.2	3401.2	2587.8	1615.3	883.2	732.1	781.2	977.5	1176.4	1204.7
25°	4227.7	3938.4	3189.5	2199.0	1074.3	635.4	610.8	671.5	809.7	942.6	963.3
27.5°	4146.3	3815.7	2958.3	1778.1	685.7	522.9	532.0	574.6	634.0	690.8	702.5
30°	4044.2	3672.4	2706.5	1311.9	520.4	467.5	482.9	508.7	534.6	570.7	578.5
32.5°	3940.9	3526.4	2444.3	901.3	454.5	437.7	453.3	467.5	489.4	513.9	519.0
35°	3848.0	3390.9	2174.5	628.8	426.2	418.4	426.2	435.2	457.2	481.6	484.3
37.5°	3780.8	3279.8	1893.0	497.2	409.3	401.6	405.5	409.3	435.2	471.3	475.2
40°	3771.8	3206.2	1607.7	446.8	396.4	386.1	383.5	386.1	419.6	460.9	464.8
42.5°	3859.6	3210.1	1328.7	426.2	386.1	374.5	364.2	369.3	399.1	431.3	433.8
45°	4067.6	3300.4	1087.3	417.1	377.1	368.1	352.5	355.1	369.3	386.1	388.7
47.5°	4434.2	3498.1	902.5	411.9	369.3	361.5	342.2	334.4	335.7	344.7	344.7
50°	5020.4	3828.6	790.2	406.7	362.8	348.6	326.7	311.2	307.3	312.5	313.7
52.5°	5894.7	4395.5	736.0	396.4	351.2	331.8	307.3	291.8	285.4	290.5	290.5
55°	7076.2	5300.7	710.2	382.2	337.1	311.2	289.3	276.3	271.2	275.1	275.1
57.5°	8423.0	6477.0	754.1	362.8	319.0	289.3	273.7	264.7	260.9	264.7	266.0
60°	10022.9	8016.3	1056.3	338.3	299.6	269.9	260.9	255.6	253.1	257.0	257.0
62.5°	12149.6	10064.2	1634.8	319.0	279.0	251.7	249.2	246.6	244.1	248.0	248.0
65°	14445.5	11927.5	1682.5	307.3	260.9	236.3	237.6	237.6	235.0	238.9	238.9
67.5°	15176.3	11766.1	940.1	293.1	238.9	220.9	226.0	226.0	224.6	228.5	227.3
68°	15021.4	11510.4	818.7	289.3	235.0	217.0	222.1	223.4	222.1	226.0	224.6
70°	13867.0	10105.5	538.5	267.3	218.2	204.0	211.8	213.1	211.8	217.0	215.6
72.5°	11447.1	7579.8	397.7	233.7	197.5	187.2	195.0	196.3	197.5	202.7	201.4
75°	7269.9	4186.3	313.7	198.9	176.9	167.9	175.6	179.5	182.1	189.9	186.0
77.5°	1991.2	1270.6	254.4	169.2	152.4	148.5	153.6	158.9	161.4	170.4	164.0
80°	697.2	561.7	211.8	143.3	126.5	125.2	130.4	135.5	138.2	145.9	138.2
82.5°	423.5	366.7	169.2	112.3	99.4	98.1	104.5	109.8	112.3	112.3	107.2
85°	220.9	193.6	124.0	78.8	68.4	64.5	76.2	82.7	83.9	82.7	78.8
87.5°	124.0	109.8	65.9	37.4	31.0	32.3	40.0	49.1	53.0	51.7	49.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)